

REMARKS

In summary, claims 1-21 are pending. Claims 1-21 are rejected under 35 U.S.C. § 103. Applicants respectfully traverse the rejections. In view of the following remarks, Applicants respectfully request withdrawal of the finality of the rejection and the rejection itself, reconsideration of the application, and the earliest possible Notice of Allowance.

Rejection of Claims 1-21 under 35 U.S.C. § 103

Claims 1-21 are rejected under 35 U.S.C. §103(a) as being unpatentable over a publication entitled, “Web-Based Specification and Integration of Legacy Services,” by Ying Zou *et al.* (hereinafter referred to as “Zou”), in view of U.S. Patent Application Publication No. 2003/0093471, by Upton (hereinafter referred to as “Upton”). Office Action, pp. 4-16. Applicants respectfully traverse the rejection of claims 1-21.

It is respectfully submitted that independent claims 1, 13, and 21 are clearly patentable over Zou and Upton, which do not teach or suggest, for example:

a configuration user interface module for receiving a configuration schema describing configuration information for an adaptor, wherein the configuration user interface module displays a single unified user interface for interfacing with any adaptor for management and setup of the adaptor, thereby eliminating a need for a user to learn to use multiple user interfaces for adaptors;

a metadata utility for automated discovery of service descriptions, the metadata utility receiving at least one metadata file providing data interface information and service description information; and

generating from the configuration schema and the metadata file a configuration file and a service selection file required by an adaptor to connect to an application.

Claim 1 (previously presented).

receiving a description of configuration data associated with an adaptor via automated discovery of service descriptions, wherein the configuration data is used for management and setup of the adaptor;

generating an adaptor-specific user interface from the configuration data description, wherein the adaptor-specific user interface is displayed as a single

unified user interface for interfacing with any adaptor, thereby eliminating a need for a user to learn to use multiple user interfaces for adaptors; receiving instance-specific data from the adaptor-specific user interface; and saving the instance-specific data and the description of configuration data in an XML file.

Claim 13 (previously presented).

receiving a description of configuration data associated with an adaptor via automated discovery of service descriptions, wherein the configuration data is used for management and setup of the adaptor;

generating an adaptor-specific property page from the configuration data description;

receiving instance-specific data from the property page; and

displaying a single unified user interface for interfacing with any adaptor, thereby eliminating a need for a user to learn to use multiple user interfaces for adaptors.

Claim 21 (previously presented).

It is respectfully submitted that each Office Action has failed to interpret the claims and all detailed limitations consistent with the specification, as is required by law quoted in the MPEP. "During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification." MPEP § 2111. The context in which the claims appear is the specification, some highlights of which are quoted below for quick reference:

An adaptor is a software component that abstracts out specifics associated with a particular application, database or protocol from the integration server. The adapter helps the Line-of-Business application to "adapt" to another Line-of-Business by enabling it to use communications protocols and semantic interactions that the Line-of-Business application understands.

Published Application, Background, ¶ 0006.

There are three broad categories of adaptors: [those] that interface with applications, [those that] interface with and access databases [and] [p]rotocol or transport-oriented adaptors . . .

Published Application, Background, ¶ 0007.

Typically, each adaptor has its own integrated applications (user interfaces) for configuration, management and setup, making it necessary for users of adapters to learn and use multiple user interfaces [e.g. to applications, databases and transport protocols] for each [associated] adapter. . . . This configuration requires a developer to write and test code for each user interface, 222, 224, 226, 228, 230, 232, and for each adaptor 242, 244, 246 248, 250 and 252, a significant development burden. . . .

Published Application, Background, ¶ 0008.

A standardized user interface for all adaptors would be helpful so that a user would only have to learn a single user interface that could be used with all adaptors. It would also be helpful, if the user interface could be automatically generated through automated discovery, centralized configuration and machine useable description of configuration, interaction patterns, methods, events and message formats.

Published Application, Background, ¶ 0010.

In FIG. 3, a single user interface 302 generated by integration server 360 interfaces with all the different software systems, 202, 204, 206, 208, 210, 212 via adaptors 342, 244, 246, 248, 350 and 352.

Published application, ¶ 0034.

The configuration user interface 410 in one embodiment of the invention displays a unified user interface 444 to acquire use input and generates an XML file 442 containing user input. The XML file 442 is used by the adaptor runtime 422 to configure the selected service for accepting or transmitting messages. The user interface 444 may be used to obtain user specified configuration values, such as server name, IP address, login and password. The additional user-specified information is saved in the XML file 442. The XML file 442 may identify to the adaptor information including one or more of the following properties: the server to be connected to, the application to be used, the logon to connect to the server, the password to connect to the server and similar information, or any other information needed by the adapter or application to run correctly.

Published application, ¶ 0038.

[I]n one embodiment of the invention, the metadata utility 412 of the integration server 404 receives one or more WSDL files and associated XML schema files from the design time/tools component 424 of adaptor 420. The WSDL file(s) may provide the adaptor's service description (interfaces) and

type information for the data that flows in and out of the adaptor and may be accompanied by associated XML schema files. The metadata utility 412 in one embodiment of the invention displays a unified interface 444 from the WSDL files and XML schema files and may generate an XML file, such as XML file 443 from the WSDL files and a subset of services cataloged in the XML schema files. The XML file 442 may be used to select and invoke services of the adaptor runtime component 422.

Published application, ¶ 0039.

Contrary to the claimed invention, Zou discusses a theoretical “proposed architecture” Zou, p. 13, Col. 2, to describe, register and search for disparate stand-alone software services distributed across the world wide web so that businesses may eventually be able to integrate such services into processes. See, e.g., Zou, p. 1, Col. 2 (“In this paper, we present an architecture and a methodology that allow for the description, registration, and integration of existing stand-alone services into Web-based environments.”). “On-going work . . . focuses on the invocation of services.” Zou, p. 13, Col. 2; see also p. 9, Col. 2 (“Future steps of our work will focus on . . . a full Web integration environment [to] integrate Web-based services”). “The major middle-ware technologies, including CORBA [and] Enterprise JavaBeans . . . provide the integration environment for distributed software components.” Zou, p. 2, Col. 1. “CORBA and Enterprise Java Beans are not a panacea for all problems that may arise when integrating services in a distributed environment.” Zou, p. 4, Col. 2.

In Fig. 1 (p. 3), Zou shows the proposed architecture where “[t]he Web server [forwards service] requests from Web clients . . . to the application server[, which] includ[es] [architecture components] Service Management, Service Localization, and Service Composition & Invocation.” Zou, p. 3, Col. 1. “Service Management maintains a ‘service database’ of the descriptions of the available services.” Zou, p. 3, Col. 1. Service Localization is a search tool that “enables the clients to search the [“service database”] by functionality, signatures, performance, or customizability.” Zou, p. 3, Col. 2; see also p. 8, § 6, 1st ¶ (“service localization . . . locate[s] distributed software services much like a search engine locates content (data) in web pages”). “Finally, the Service Composition & Invocation module provides a framework and a scripting language for processes to be dynamically configured, in order to invoke and compose remote services.” Zou, p. 3, Col. 2.

A web interface with web-based forms is used to register services in the service database. Zou, pp. 7-8, § 5; Figs. 7-8. “After submission [of the basic registration form shown in Fig. 7], the Web interface will create an HTML form as shown in Figure 8, where the user can add more information about the newly registered service.” Zou, p. 8, Col. 1. “The user interface [to enter additional information about a registered service] is generated dynamically according to available facts [about the service].” Zou, p. 7, Col. 2. A web interface with a web based form shown in Fig. 10 is used to query the service database. Zou, p. 8, § 6; Figs. 9-10. “If multiple results meet the search criteria, the available services can be listed and ranked according to performance, response time from the server, or cost.” Zou, p. 8, Col. 2.

Contrary to the claimed invention, Upton discusses “business-focused interfaces to an EIS . . . referred to . . . as ‘application views’,” Upton, ¶ 0033, that “provide a layer of abstraction . . . between an adapter and the EIS functions exposed by the adapter.” Upton, ¶ 0036. “After an adapter is created, a Web-based interface for the adapter can be used to define application views.” Upton, ¶ 0036. “A user can tailor an application view . . . As a result, the application view can provide an effective alternative to the ‘one size fits all’ approach that many applications provide for the design of a client interface.” Upton, ¶ 0038. “[T]o use an adapter, it is only necessary to know how to define and use application views. . . [A]ll adapters can use a similar Web-based interface for defining application views.” Upton, ¶ 0077.

Upton clearly distinguishes between adapters and application views designed to make use of, not manage or setup, adapters. The similar Web-based interfaces disclosed by Upton are not used to manage, setup or even interface with adapters but, instead, are used to create application views to abstractly use functions exposed by adapters. Moreover, multiple similar Web-based interfaces are clearly not the same as “a single unified user interface for interfacing with any adapter.” Upton does not describe what the Office Action alleges it describes.

As best Applicants can understand it by parsing the statements made, the Office Action makes the following argument against claim 1:

Claim element in Claim 1:

“configuration user interface module for receiving a configuration schema describing configuration information for an adaptor”

“configuration schema describing configuration information for an adaptor”

“configuration information”

“adaptor”

“unified user interface for interfacing with any adaptor for management and setup of the adaptor, thereby . . .”

“metadata utility for automated discovery of service descriptions [and] data interface”

“automated discovery of service descriptions [and] data interface [in a metadata file]”

“generating from the configuration schema and the metadata file a configuration file and a service selection file required by an adaptor to connect to an application”

Is argued in the Office Action to be equivalent to:

Fig. 10 “Web interface of the service search engine”
“Web interface [is] designed to receiv[e] a search specification” OA p.4

Fig. 10 “Web interface of the service search engine”
“interface of the search specifications considered as a configuration schema that describes the configuration of a search query” OA p.4

Fig. 7 Web-interface for service registration
“service interface description is equivalent to configuration information for an adaptor to that service”

“each software service”
“each software service represents an adapter” OA p.4

Fig. 10 “Web interface of the service search engine”
“Web interface can be considered as a single unified user interface to all adaptors” OA p.4

“Zou et al. does not teach a single user interface for management and setup of the adapter.” OA p.5

“obvious” to modify Zou with “a single user interface” in view of Upton’s “web-based interfaces that allows user to define (setup) application views of an adapter [which is] equivalent to single user interface” OA pp.5-6

“service management module”
“service management module is equivalent to Applicant’s ‘metadata utility’” OA pp.4-5

“CORBA object wrapper act[ing] as . . . adapter”
“A CORBA object wrapper acts as an interface adapter [for legacy services] [and] can . . . automatically register[] its description into a service repository.” Zou, p.4, Col. 2. This “is equivalent to . . . metadata file [and] automated discovery.” OA p.5

“service descriptions” stored in database
“service description . . . is equivalent to . . . ‘configuration file’” and “one table to index the service ID and the corresponding XML service description’ is equivalent to . . . ‘service selection file’.” OA p.5

It is respectfully submitted that the Office Action constructed its argument on a myopic claim element by claim element basis, which does not consider the claimed invention as a whole. *See, e.g., Rockwell Int'l Corp. v. United States*, 147 F.3d 1358, 1364 (Fed. Cir. 1998) (emphasis added) (“In determining obviousness, the invention must be considered as a whole without the benefit of hindsight, and the claims must be considered in their entirety.”).

The lack of merit of the argument on the whole against the claims on the whole is clearly exposed by the resulting mismatched, inoperable, or otherwise inconsistent interrelationships between components in Zou and Upton that the Office Action equated to elements in the claimed invention. Zou and Upton do not disclose the interrelationships resulting from the argument made in the Office Action.

First, having equated the claimed “configuration user interface module” to Zou’s “web interface of the search engine” and the claimed “configuration schema” to Zou’s “interface of the search specifications . . . that describes the configuration of a search query,” Zou is required to disclose (in order to make the argument valid by following the actual claim language) that the “Web interface of the service search engine” receives the “interface . . . that describes the configuration of a search query.” However, that is not possible because the search engine does not receive itself. The form used to enter search information is part and parcel of the search engine. Moreover, the search information typed in by a user is transmitted (to the service management) not received. These inconsistencies alone prove the argument to be without merit.

Further still, claim 1 states that “configuration schema” “describ[es] configuration information for an adaptor.” However, the search information typed in by a user into Zou’s form (see Fig. 10) is about the software service; not an adapter to it. Fig. 10 has entries for “service ID,” “Service Path,” “Service Category,” “Functionality Description,” “Vendor,” “Version.” Remember, a user of Zou’s proposed system would be searching for a software service, not the adaptors that may have been used to turn legacy systems into available software services. To interpret Claim 1 consistent with the application as is required by law, the claimed adaptor is not the same as the application to which it interfaces. Quite clearly, it is the application, not the adaptor interfaced to it, as described in the application, that is

similar to the software services referred to in Zou. The Office Action’s statement that “each software service represents an adaptor” is without merit. It is respectfully submitted that the Office Action misconstrued the claimed “adaptor,” instead of the claimed “application,” as Zou’s “software service” in order to rejection the claimed invention.

Second, having equated the claimed “configuration schema” to Zou’s “interface of the search specifications . . . that describes the configuration of a search query” and the claimed “configuration information” to Zou’s “service interface description” shown in Fig. 7, Zou is required to disclose (in order to make the argument valid by following the actual claim language) that the search engine form in Fig. 10 describes the service description form in Fig. 7. That is not possible because the forms themselves describe nothing; they are merely data entry forms. The Fig. 7 form is used to acquire data from a user in order to make an entry in the database and the Fig. 10 form is used to acquire search terms to search the database entries.

Third, having equated the claimed “unified user interface” to Zou’s web-based search form and the claimed “adaptor” to “each software service,” Zou is required to disclose (in order to make the argument valid by following the actual claim language) that its web-based search form interfaces with “each software service.” However, that is not remotely true because the web-based search form only “interfaces” with the “service management module,” which, in turn, only “interfaces” with a database storing searchable descriptive information about “each software service,” as opposed to storing “each software service.”

Furthermore, in order to follow the claimed invention, Zou would also be required to disclose that its web-based search form is used “for management and setup of” “each software service.” Once again, that is not possible because the web-based search form is only used to search the descriptive information about “each software service” that is stored in the database. The web-based search form does not do any management or setup, of anything.

Fourth, having equated the claimed “unified user interface” to Zou’s web-based search form and the claimed “adaptor” to “each software service,” and having argued that Upton’s disclosure of “similar Web-based interface for defining application views” between

actual adapters and a client application that does not setup or manage the adapters but instead only application views would make it obvious to use Zou's Fig. 10 search form to manage and setup adaptors, Zou is required to disclose (in order to make the argument valid by following the actual claim language) that its web-based search form in Fig. 10 actually manages and sets up adaptors. However, that is not possible because the Fig. 10 search form sets up and manages absolutely nothing.

Fifth, having equated (a) the claimed "configuration schema" to Zou's "interface of the search specifications . . . that describes the configuration of a search query," (b) the claimed "metadata file" to the service description registration provided by a CORBA wrapper to the "service management module" database, (c) the claimed "configuration file" to the service description registration provided by a CORBA wrapper to the "service management module" database and (d) the claimed "service selection file" to Zou's searchable database table entry indexing service ID to service description, Zou is required to disclose (in order to make the argument valid by following the actual claim language) that both the CORBA wrapper service description registration and the searchable database entry with the service description are each generated from the Fig. 10 web search engine and the CORBA wrapper service description registration. However, that is not possible because neither is generated from the Fig. 10 web search engine. The Fig. 10 web search engine is merely a tool to search entries in the database.

Sixth, having equated (a) the claimed "adaptor" to "each software service," (b) the claimed "application" to ??? (the Office Action does not specify because it already equated the claimed "adaptor" to Zou's "software service," and (c) the claimed "service selection file" to Zou's searchable database table entry indexing service ID to service description, Zou is required to disclose (in order to make the argument valid by following the actual claim language) that the searchable database entry describing the software service is required by the software service to connect to ??? (itself). The argument in the Office Action has no merit because it has not properly equated "software service" to "application." Thus, the arguments of the Office Action are based on a false foundation.

DOCKET NO.: MSFT-2752/302033.01
Application No.: 10/721,002
Office Action Dated: October 29, 2007

PATENT
REPLY FILED UNDER EXPEDITED
PROCEDURE PURSUANT TO
37 CFR § 1.116

In summary, when viewed on the whole, as it must be, the argument made in the Office Action to reject claim 1 does not survive the test of logic or law. The foregoing analysis applies equally well to independent claims 13 and 21 having claim limitations similar to claim 1, as well as all claims depending from claims 1, 13, and 21. Thus, for at least the reasons recited with respect to Claim 1, Applicant respectfully requests withdrawal of the rejection of claims 1-21.

Amendments previously made are without abandonment of subject matter. Applicants expressly reserve the right to, in the pending application or any application related thereto, reintroduce any subject matter removed from the scope of claims by any amendment and introduce any subject matter not present in current or previous claims.

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CONCLUSION

In view of the foregoing remarks, it is respectfully submitted that this application is in condition for allowance. Applicants respectfully request withdrawal of the finality of the rejection and the rejection itself, reconsideration of the application and the earliest possible Notice of Allowance.

Date: December 27, 2007

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